

## CLAIMS

*Sub 4)* Having thus described our invention, what we claim as new and desire to secure by Letters Patent is as follows:

1. A multiple stage pump, comprising:
  - 2      a first pump in a first stage;
  - 3      a second pump in a second stage;
  - 4      at least one valve upstream from one of the first pump and the second pump in at least one of the first stage and the second stage; and
  - 5      a common branch line connecting the first stage and the second stage to a
  - 6      common hydraulic system.
1. The multiple stage pump of claim 1, wherein the at least one valve includes:
  - 2      a first valve upstream of the first pump in the first stage of the hydraulic system;
  - 3      and
  - 4      a second valve upstream of the second pump in the second stage of the hydraulic system.
1. The multiple stage pump of claim 1, further including:
  - 2      at least another valve in direct line and upstream from the at least one valve; and
  - 3      a valve system associated with the common branch line upstream from the connection of the first stage and the second stage.
1. The multiple stage pump of claim 3, wherein  
2      the at least one valve includes:
  - 3      a first valve upstream of the first pump in the first stage of the hydraulic

4        system; and

5        a second valve upstream of the second pump in the second stage of the  
6        hydraulic system; and

7        the at least another valve includes:

8        a first other valve upstream from the first valve; and

9        a second other valve upstream from the second valve.

1        5. The multiple stage pump of claim 1, wherein the at least one valve includes three  
2        valves associated with both the first stage and the second stage.

1        6. The multiple stage pump of claim 1, wherein the at least one valve is one of a control  
2        valve, a flow valve, a pressure control valve and an on/off valve.

1        7. The multiple stage pump of claim 1, further comprising

2        a first check valve associated with the first stage; and

3        a second check valve associated with the second stage, wherein

4        the first check valve is adapted to ensure that the second pump in the  
5        second stage is not running against a low pressure of a valve of the at least one valve  
6        associated with the second stage which is in an "off" position, and

7        the second check valve is adapted to ensure that the first pump in the first  
8        stage is not running against a low pressure of a valve of the at least one valve associated  
9        with the first stage which is in the "off" position.

1        8. A multiple stage pump, comprising:

2        at least two pumps; and

3        at least two valve means for regulating fluid from the at least two pumps,

4        respectively, the at least two valve means being upstream from the at least two pumps in

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*5* a respectively same line as the at least two pumps.

3 *B6* the fluid flow passes a check valve after each pump stage before the fluid flow is  
4 combined in the common branch line,

5 the check valves regulate switching without pressure peaks throughout the  
6 multiple stage pumping system, and

7 the check valves ensure that an opposite side pump of the multiple stage pumping  
8 system is not running against a low pressure of a valve which is in an "off" position.

1 16. The pumping system of claim 15, wherein the control valves are positioned in  
2 parallel and in line to respective reservoirs thereby eliminating pressure drops.

1 17. The pumping system of claim 16, wherein a start position of any of the control valves  
2 is a closed position to thus provide a fail safe position when any of the control valves  
3 fails.

*Add A1*

*Add B5*